

BEARING STRUCTURE

1 BACKGROUND OF THE INVENTION

2 1. Field of the Invention

3 The present invention relates to a bearing, and more particularly to a
4 bearing having a metal ring formed on a U-shaped groove defined in a plastic
5 ring which encloses therein a rotation member so that a light weight yet high
6 load capability bearing structure is formed.

7 2. Description of Related Art

8 A conventional bearing, as shown in Fig. 3, usually is composed of a
9 rotation member (6), a metal ring (7) enclosing therein the rotation member (6)
10 and having a U-shaped groove (71) defined in an outer periphery of the metal
11 ring (7) to allow a rope to be reeved therearound. The metal bearing is durable
12 and has high load capability. However, the work for mounting the metal ring
13 onto the rotation member is difficult and thus the fabrication cost of this type of
14 bearing is high.

15 In order to overcome the disadvantage of the conventional bearing,
16 another bearing is introduced to the market, which comprises a rotation member
17 (8) and a plastic ring (9) mounted outside the rotation member (8) to enclose
18 therein the rotation member (8) and having a U-shaped groove (91) defined in an
19 outer periphery of the plastic ring (9) to allow a rope to be reeved therearound.
20 This semi-plastic product involves only simple work to mount the plastic ring
21 onto the rotation member so that the fabrication cost is low and required
22 manpower is minimal due to automated production. Still, this kind of semi-

1 plastic bearing suffers a different kind of disadvantage. That is, the load
2 capability of this semi-plastic bearing is low in that the plastic ring is easily worn
3 as a result from the friction of the rope in the U-shaped groove. Thus,
4 improvement is required to introduce an improved bearing.

5 To overcome the shortcomings, the present invention tends to provide an
6 improved bearing to mitigate the aforementioned problems.

7 SUMMARY OF THE INVENTION

8 The primary objective of the present invention is to provide an improved
9 bearing having a plastic ring mounted outside the rotation member and a metal
10 ring mounted outside the plastic ring such that the work for mounting the plastic
11 ring on the rotation member is simple and the load capability is high due to the
12 providing of the metal ring outside the plastic ring.

13 Other objects, advantages and novel features of the invention will
14 become more apparent from the following detailed description when taken in
15 conjunction with the accompanying drawings.

16 BRIEF DESCRIPTION OF THE DRAWINGS

17 Fig. 1 is an exploded perspective view of the bearing of the present
18 invention;

19 Fig. 2 is a cross sectional view of the bearing of the assembled bearing of
20 the present invention;

21 Fig. 3 is a perspective view of a conventional bearing; and

22 Fig. 4 is a perspective view of another conventional bearing.

23 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

1 With reference to Fig. 1, the bearing in accordance with the present
2 invention has a rotation element (1) with an outer portion (11) and an inner
3 portion (12) securely and rotatably received inside the outer portion (11), a
4 plastic ring (3) securely mounted on an outer periphery of the outer portion (11)
5 to allow the plastic ring (3) to rotate relative to the inner portion (12), the plastic
6 ring (3) having a U-shaped groove (31) defined in an outer periphery thereof and
7 a metal ring (4) securely mounted on the plastic ring (3) and having a second
8 U-shaped groove (41) corresponding to the U-shaped groove (31) of the plastic
9 ring (3).

10 With reference to Fig. 2, when the bearing of the present invention is in
11 assembly, it is noted that the plastic ring (3) is mounted on the rotation element (1)
12 by an automated process such as injection molding. Thereafter, the metal ring (4)
13 is securely mounted on the outer periphery of the plastic ring (3) by an automated
14 process again, such as die casting, with the second U-shaped groove (41) aligned
15 with the U-shaped groove (31) of the plastic ring (3).

16 After assembly, it is learned that the work involved to mount the plastic
17 ring (3) on the outside the outer portion (12) of the rotation element (1) and the
18 work required to mount the metal ring (4) outside the plastic ring (3) are simple
19 such that the manufacture cost is low. Besides, because the metal has higher
20 durability than that of the plastic, the metal ring mounted outside the plastic ring
21 (3) increases the load capability when compared with the conventional bearing.

22 It is to be understood, however, that even though numerous
23 characteristics and advantages of the present invention have been set forth in the

1 foregoing description, together with details of the structure and function of the
2 invention, the disclosure is illustrative only, and changes may be made in detail,
3 especially in matters of shape, size, and arrangement of parts within the
4 principles of the invention to the full extent indicated by the broad general
5 meaning of the terms in which the appended claims are expressed.